

**Deputy Commissioner (Group-A)
(Scheme & Syllabus for Direct Recruitment)**

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| Test Duration | 03 hours | |
| Total Questions | 200 Objective type multiple choice questions | |
| Total Marks | 200 Marks | |
| Section name (Nature of Questions) | Marks per item | No. of items |
| Part-I : Reasoning Ability Analogies - Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Similarities and differences, word building, relationship concepts, Arithmetic number series, - Semantic Series, Number Series, Coding and decoding - Small & Capital letters/numbers coding, decoding and classification | 01 mark per question. | 20 questions |
| Part-II : General English & General Hindi A. General English i. Comprehension -10 marks ii. Word Power -10 marks iii. Language -10 marks B. General Hindi i. कम्पिरेहेन्सन -10 marks ii. शब्द सामर्थ्य -10 marks iii. भाषा -10 marks | 01 mark per question. 30 Marks 30 Marks | 60 questions |
| Part-III: General Knowledge: Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Scientific Research, awards, Sports, Current affairs-India & World | 01 mark per question. | 20 questions |
| Part-IV: Contemporary issues in Education and History of Education system in India (a) The Constitutional Context <ul style="list-style-type: none"> • Constitutional values and education (Preamble, Fundamental rights and duties) • Right to Free and Compulsory Education 2010 (RTE) • Inclusive Education (b) The Social Context of Educational Policy <ul style="list-style-type: none"> • Challenges posed for education by the socio-cultural and economic context • Child labour • Child abuse-POCSO Act • Composition of Indian society and its implications for education • Classroom ethos from the perspective of children from diverse socio-cultural and economic backgrounds (c) A Thematic Focus on Educational Policy <ul style="list-style-type: none"> • Kothari Commission and the vision of Common Schooling; National Policy on Education 1986 • Ramamurthy Committee 1992 • Yashpal Report 1993 • National Curriculum Framework 2005 • Three-language formula • Zakir Hussain Committee • Basic Education • Mudaliar Commission • Skills and vocational education | 01 mark per question. 05 Marks 03 Marks 03 Marks | 20 questions |

Assistant Engineer (Civil) (Group-B)
(Scheme & Syllabus for Direct Recruitment)

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| Test Duration | 03 hours | |
| Total Questions | 200 Objective type multiple choice questions | |
| Total Marks | 200 Marks | |
| Section name (Nature of Questions) | Marks per item | No. of items |
| Part-I : General Knowledge Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Scientific Research, awards, Sports, Current affairs-India & World | 01 mark per question. | 20 questions |
| Part-II : Reasoning Ability Analogies - Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Similarities and differences, word building, relationship concepts, Arithmetic number series, - Semantic Series, Number Series, Coding and decoding - Small & Capital letters/numbers coding, decoding and classification | 01 mark per question. | 20 questions |
| Part-III : English and Hindi Knowledge 1. General English Comprehension, One word substitution, Synonyms and Antonyms, Spelling error, Spotting error in sentences , Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' and 'THE', Idioms and Phrases 2. General Hindi तत्सम, तद्भव, पर्यायवाची, विलोम, मुहावरे और लोकोक्तियाँ, शुद्ध, अशुद्ध वाक्य, संधि-विच्छेद, अलंकार और समास, वचन, लिंग, अनेकार्थी और वाक्य के लिए एक शब्द | 01 mark per question. | 40 questions |
| Part-IV: Quantitative Aptitude Number System, Time and Work, Averages, Percentages, Profit and loss, Ratio and Proportions, Simple and Compound Interest, Time and Distance | 01 mark per question. | 20 questions |
| Part-V : Subjective paper 1. Building Materials: Stone, Lime, Glass, Plastic, Steel, FRP, Ceramics, Aluminum, Fly Ash, Basic Admixtures, Timber, Bricks and Aggregates : Classification, Properties and Selection criteria; Cement: Type, Composition, Properties, Uses, Specifications and various Tests; Lime & Cement Mortars and Concrete: Properties and various Tests; Design of Concrete Mixes: Proportioning of aggregates and methods of mix design. | 01 mark per question | 30 questions |
| 2. Design of Concrete and Masonry Structures: Limit state design for bending, shear, axial compression and combined forces; Design of beams, slabs, Lintels, Foundations, Retaining walls, Tanks, Staircases; Principles of pre-stressed concrete designs including materials and methods; Earthquake resistant design of structures; Design of Masonry Structure. | 01 mark per question | 20 Questions |

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| <p>3. Construction Practice, Planning and Management: Construction – Planning, Equipment, Site investigation and Management including Estimation with latest project management tools and network analysis for different Types of works; Analysis of Rate of various types of works; Tendering Process and Contract Management, Quality Control, Productivity, Operation Cost; Land acquisition; Labour safety and welfare.</p> | 01 mark per question | 20 Questions |
| <p>4. Geo-technical Engineering and Foundation Engineering: a) Geo-Technical Engineering: Soil exploration – Planning & methods, Properties of Soil, classification, various tests and inter-relationships; Permeability & Seepage, Compressibility, consolidation and shearing resistance, Earth pressure theories and stress distribution in soil; Properties and uses of geo-synthetics. b) Foundation Engineering: Types of Foundation & selection criteria, bearing capacity, settlement analysis, design and testing of shallow and deep Foundations; Slope Stability analysis, Earthen embankments, Dams and Earth retaining structures; types, analysis and design, Principles of ground modifications.</p> | 01 mark per question | 15 Questions |
| <p>5. Surveying and Geology: a) Surveying: Classification of Surveys, various methodologies, instruments & analysis of measurement of distances, elevation and directions; Field astronomy, global Positioning System; Map preparation; Photogrammetry; Remote sensing concepts; Survey Layout for culverts, canals, bridges, road/railway alignment and buildings, Setting out of Curves. b) Geology: Basic Knowledge of Engineering geology & its application in projects.</p> | 01 mark per question | 15 Questions |

Interview : 100 Marks

Weightage of Written/Online Computer Based Test and Interview - 85:15

Assistant Engineer (Electrical) (Group-B)
(Scheme & Syllabus for Direct Recruitment)

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| Test Duration | 03 hours | |
| Total Questions | 200 Objective type multiple choice questions | |
| Total Marks | 200 Marks | |
| Section name (Nature of Questions) | Marks per item | No. of items |
| Part-I : General Knowledge Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Scientific Research, awards, Sports, Current affairs-India & World | 01 mark per question. | 20 questions |
| Part-II : Reasoning Ability Analogies - Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Similarities and differences, word building, relationship concepts, Arithmetic number series, - Semantic Series, Number Series, Coding and decoding - Small & Capital letters/numbers coding, decoding and classification | 01 mark per question. | 20 questions |
| Part-III : English and Hindi Knowledge 1. General English Comprehension, One word substitution, Synonyms and Antonyms, Spelling error, Spotting error in sentences , Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' and 'THE', Idioms and Phrases 2. General Hindi तत्सम, तद्भव, पर्यायवाची, विलोम, मुहावरे और लोकोक्तियाँ, शुद्ध, अशुद्ध वाक्य, संधि-विच्छेद, अलंकार और समास, वचन, लिंग, अनेकार्थी और वाक्य के लिए एक शब्द | 01 mark per question. | 40 questions |
| Part-IV: Quantitative Aptitude Number System, Time and Work, Averages, Percentages, Profit and loss, Ratio and Proportions, Simple and Compound Interest, Time and Distance | 01 mark per question. | 20 questions |
| Part-V : Subjective paper 1. Engineering Mathematics Matrix theory, Eigen values & Eigen vectors, system of linear equations, Numerical method for solution of non-linear algebraic equations and differential equations, integral calculus, partial derivatives, maxima and minima, line, surface and Volume integrals. Fourier series, linear, non-linear and partial differential equations, initial and boundary value problems, complex variables, Taylor's and Laurent's series, residue theorem, probability and statistics fundamentals, Sampling theorem, random variables, Normal and poisson distributions, correlation and regression analysis. | 01 mark per question | 25 questions |
| 2. Electrical Materials Electrical Engineering Materials, crystal structures and defects, ceramic materials, insulating materials, magnetic materials basics, properties and applications; ferrites, ferro-magnetic materials and components; | 01 mark per question | 25 questions |

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| <p>basics of solid state physics, conductors; photo-conductivity; Basics of Nano materials and superconductors.</p> | | |
| <p>3. Electric Circuits and Fields: Circuit elements, network graph, KCL, KVL, Node and Mesh analysis, ideal current and voltage sources, Thevenin's, Norton's, Superposition and Maximum Power Transfer theorems, transient response of DC and AC networks, Sinusoidal steady state analysis, basic filter concepts, two-port networks, three phase circuits, Magnetically coupled circuits, Gauss Theorem, electric field and potential due to point, line, plane and spherical charge distributions, Ampere's and Biot-Savart's law; inductance, dielectrics, capacitance; Maxwell's equations.</p> | <p>01 mark per question</p> | <p>25 Questions</p> |
| <p>4. Control Systems: Principles of feedback, transfer function, block diagrams and signal flow graphs, steady-state errors, transforms and their applications; Routh-hurwitz criterion. Nyquist techniques, Bode plots, root loci, lag, lead and lead-lag compensation, stability analysis, transient and frequency response analysis, state space model, state transition matrix, controllability and observability, linear state variable feedback, PID and industrial controllers.</p> | <p>01 mark per question</p> | <p>25 Questions</p> |

Interview : 100 Marks

Weightage of Written/Online Computer Based Test and Interview - 85:15